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POSTURAL SCREENING PROGRAM

Guidelines for Physicians and School Nurses

September 1985

Division of Family Health Services
Massachusetts Department of Public Health

INTRODUCTION

Postural defects are a significant health problem among otherwise healthy adolescents. Because these defects often develop slowly and without pain to the child, screening to detect them at an early stage is an important preventive public health strategy. Annual postural screening programs for students grades 5 through 9 are now mandated in Massachusetts Schools.

The school screening program is designed to identify children who should have further medical evaluation by their primary care physician. The primary care physician will then determine if the child should be referred to an orthopedic specialist.

The following guidelines are not designed to establish diagnostic criteria but rather to promote uniform screening criteria which will increase sensitivity and selectivity and ensure that children are referred to the appropriate physician.

Increased experience is changing our views about minor curves. Although there are still many unanswered questions, we feel that the following guidelines are reasonable and will assure appropriate and adequate referral of children.

GENERAL INFORMATION

Puberty is an important landmark

Puberty refers to secondary sexual characteristics rather than menarche.

Curves increase slowly up to puberty.

Some curves increase rapidly during puberty.

90% of small curves that occur after puberty do not progress.

A child with a minimal rib hump at the end of skeletal maturity is extremely unlikely to develop a significant problem.

The primary care physician will decide based on the degree of abnormality whether the child can be treated by him/her or needs to be referred to an orthopedic specialist.

Proper x-ray procedures

When x-rays are done they should be standing films, either AP or PA of the spine when the concern is for scoliosis or a lateral standing view when the concern is for kyphosis or lordosis.

A single film should be taken, the patient should be appropriately shielded, be barefoot and standing with knees straight. The film should extend from the clavicles to the iliac crest.

Rare earth noncolumnated x-ray film is recommended.

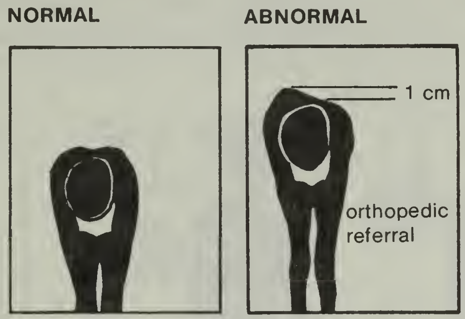
“Scoliosis Series” is unnessary.

When a referral is made by the school, the physician should inform the school of the outcome of the referral.

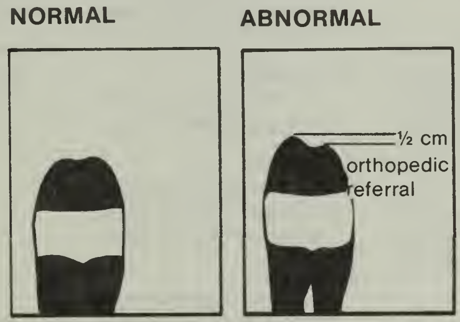
Examination

1. **Frontal-Posterior:** Scoliosis is a lateral curve of the spine and is identified when a child is examined from the front or from the back. Because serious forms are always associated with rotation of the spine, the best evaluation of scoliosis is a view in the forward bend position in which the alignment of the eye is along the axis of the spine.

   a. A 1 cm rib hump in the thoracic region is usually indicative of a 10 to 15 degree curve; this is an indication for orthopedic referral.



   b. A ½ cm hump in the lumbar region is usually indicative of a 10 to 15 degree curve; this is an indication for orthopedic referral.



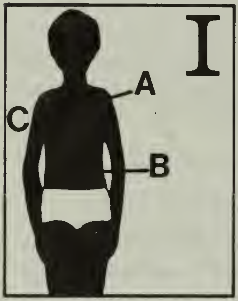
   c. A child who has completed growth with less than a 1 cm rib hump is very unlikely to develop a significant problem in the future.

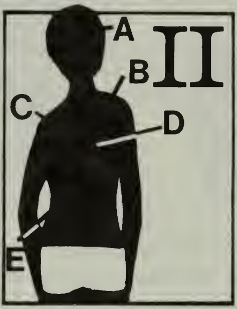
SCHOOL REFERRAL CRITERIA

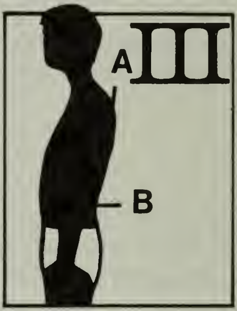
Children with clearly positive findings in the following areas, using the described procedure, should be referred to their primary care physician. The following criteria are used in the school based screening program.

Examinat

A. Students should stand on a tape mark. Feet should be slightly apart, knees should be straight and arms should hang loosely at the sides. Students should stand straight and avoid slouching. In this position conduct a visual examination of the body's symmetry from the front, back and side. Areas of focus are as illustrated:







A. Shoulder
Is one shoulder higher than the other?

B. Waist
Is the waistline the same on both sides or is there a larger space between the arm and flank on one side?

C. Hip
Are the hips level and symmetrical or is one side higher or more prominent?

A. Head
Does the head line up over the crease in the buttocks or does it lean to one side?

B. Shoulder
Is one shoulder higher than the other?

C. Scapula
Is the wing on one shoulder blade higher or more prominent than the other?

D. Spine
Does there appear to be a curve when you observe the spine?

E. Waist
Is the waistline the same on both sides or is there a larger space between the arm and flank on one side?

A. Round Back
Is there an exaggerated roundness in the upper back?

B. Sway Back
Is there an exaggerated arch in the low back?

Preparation of students

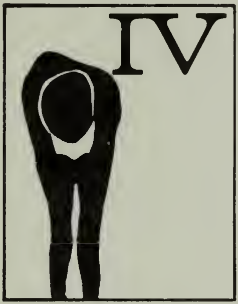
Boys and girls should be screened separately in a place that has some privacy.

If possible, arrange to have screener and student of the same sex.

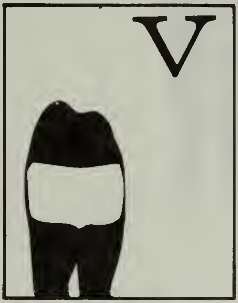
Students should be checked with their backs bare. Boys should strip to the waist; girls should wear two piece bathing suits or shorts and a halter. Shoes should be removed.

procedure

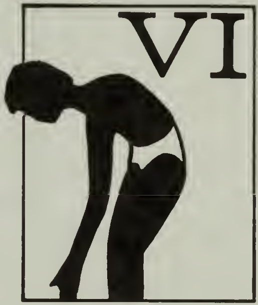
B. Have student bend forward until his/her back is parallel to the floor. The feet are together, knees straight, the palms of the hands are together and the head is down. In this position examine the child from the front, back and side view.



Chest Cage Hump
Are both sides of the back symmetrical or is the chest cage prominent or bulging on one side?



Flank Hump
Are both sides of the lumbar (flank) area symmetrical or is one side more prominent than the other?



Spine Hump
Is there an accentuated midline hump?

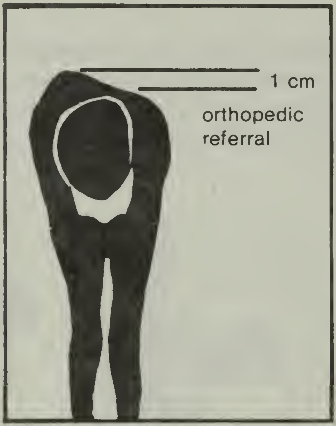
PHYSICIAN REFERRAL CRITERIA

Children with the following symptoms should be referred to an orthopedic specialist.

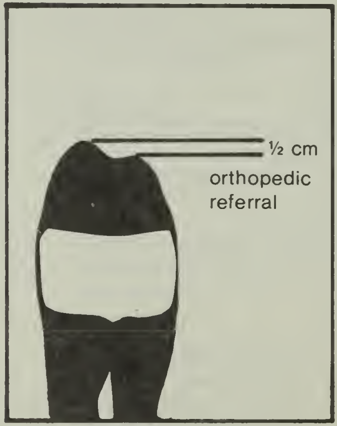
Pain - anyone with significant persistent pain.

Anyone with neurologic deficit.

Thoracic rib hump - any rib hump that is greater than 1 cm.



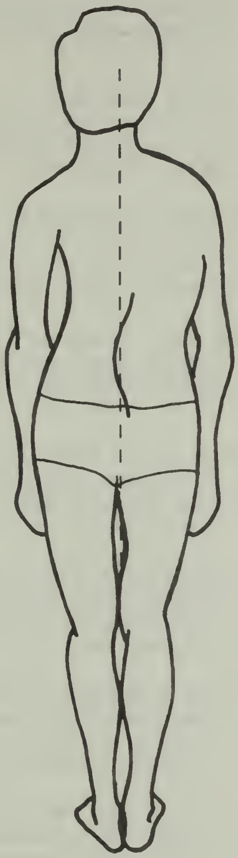
Lumbar hump - any prominence that is greater than ½ cm.



Any pre-pubertal curve which is greater than 15 degrees when measured by the Cobb Method.

Any post-pubertal curve which is greater than 20 degrees when measured by the Cobb Method.

Balance - any unbalanced spine (i.e. head away from midline, arm away from trunk).



Any congenital anomaly of the vertebra or ribs.

Any kyphosis or lordosis which is clinically significant.

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